

Remarks:

Applicant has amended claims to expedite prosecution of preferred embodiments. Accordingly Applicants do not abandon any subject matter that has been cancelled.

Specifically, the Applicant has amended claim 6, steps (b) and (c) as suggested by the Examiner to clarify the grammar of the claims. Claim 7 has been amended to comply with the amendments to claim 6. As such, the amendments are clerical and do not introduce new matter and their entry is respectfully requested.

Applicant has added new claim 38. The subject matter of this claim was previously presented in claim 16. Claim 38 now includes specific method steps in combination with the methods as described previously in claim 16. Accordingly, Applicant respectfully submits that no new matter has been introduced by the new claim and its entry is respectfully requested.

In view of the new claim, claim 16 has been cancelled. Claim 15 has been cancelled without prejudice. Claim 17 has been amended to comply with the cancelling of claim 15.

Turning now to the specific rejections.

The Examiner rejected claim 2 under 35 U.S.C. §103 as allegedly obvious over U.S. Patent No. 6,235,502 to Weissmann ("Weissmann") in view of Kaur et al. ("Kaur").

Applicant respectfully submits that the rejection should be withdrawn for the following reasons.

Kaur was published on September 17, 2002. The priority date for the present application is January 15, 2003. Applicant submits herewith a Declaration under 37 C.F.R. 1.131 executed by Dr. Makrigiorgos, the sole inventor, showing that he had conceived and reduced to practice the claimed methods of amplifying DNA hairpin structures to reduce errors introduced by polymerase chain reaction prior to the Kaur publication date of September 17, 2002.

Even if the Examiner were for some reason to dispute the breadth of what Applicant did, the manuscript certainly shows that he did at as much as described in Kaur. It is sufficient for Applicant to show only as much as the reference discloses prior to the date of the reference. In re Stemple, 44 CCPA 820, 241 F.2d 755, 113 USPQ 77 (1957). Applicant's manuscript describing data shows that Applicant had reduced to practice at least as much as was disclosed by Kaur.

Accordingly, Applicant respectfully submits that Kaur cannot be used as prior art for this application.

As admitted by the Examiner, Weissmann does not teach or suggest a method wherein a Y shaped adaptor or two single-stranded sequences ligated to one end are used as priming sites to PCR in the same reaction. Thus, Weissmann alone does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner rejected also claims 6-12, 15-17 and 36-37 under 35 U.S.C. §103 as allegedly obvious over Weissmann in view of Kaur and further in view of a U.S. Patent No. 6,114,115 to Wagner ("Wagner").

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

As stated, *supra*, Kaur cannot be used as prior art with respect to the present application.

As admitted by the Examiner, Weissman does not teach or suggest converting the PCR products into hairpin structures by a method which induces denaturateion followed by sudden renaturation, identifying hairpins containing mismatches or mutation, removing them, and collecting the DNA containing no mismatches. All that Wagner adds to the teachings in Weissmann is that Wagner in general describes use of immobilized DNA mismatch-binding protein to isolate or remove duplex DNA molecules containing mismatches in PCR amplified samples. Thus, the combination of Weissman with Wagner does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner further rejected claim 2 under 35 U.S.C. §103 as allegedly obvious over Patent No. 5,470,924 to Ahern ("Ahern") in view of Kaur.

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

As stated, *supra*, Kaur cannot be used as prior art with respect to the present application.

As admitted by the Examiner, Ahern does not teach or suggest a method wherein two single stranded sequences are ligated to one end and are used as priming sites for PCR in the same reaction. Thus Ahern alone does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner rejected claims 6-12, 15-17 and 36-37 under 35 U.S.C. §103 as allegedly obvious over Ahern in view of Kaur and further in view of Wagner.

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

As stated, *supra*, Kaur cannot be used as prior art with respect to the present application. Also, as discussed, *supra*, Ahern does not teach or suggest the claims alone. All Wagner described is a method wherein one subjects amplified PCR products to denaturation, followed by sudden renaturation, and then using MutS to identify sequence structures containing mismatches or mutations. Thus Ahern alone in combination with Wagner does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner further rejected claim 2 under 35 U.S.C. §103 as allegedly obvious over Abarzua in view of Kaur.

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

As stated, *supra*, Kaur cannot be used as prior art with respect to the present application. As admitted by the Examiner, Abarzua does not discuss a method wherein two single stranded sequences are ligated to one end and are used as priming sites for PCR in the same reaction. Thus, Abarzua alone does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner also rejected claims 6-12, 15-17 and 36-37 under 35 U.S.C. §103 as allegedly obvious over Abarzua in view of Kaur and further in view of Wagner.

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

As stated, *supra*, Kaur cannot be used as prior art with respect to the present application. All that Wagner described is a method wherein one subjects amplified PCR products to denaturation, followed by sudden renaturation, and then using MutS to identify sequence structures containing mismatches or mutations. Thus, Abarzua in view of Wagner does not teach or suggest all the elements of the claims.

Accordingly, Applicant respectfully submits that the rejection should be withdrawn.

The Examiner further rejected claim 35 under 35 U.S.C. §103 as allegedly obvious over Weissman in view of U.S. Patent No. 5,470,924 to Ahern ("Ahern").

Although Applicant respectfully disagrees, to expedite prosecution of the preferred embodiments, Applicant has cancelled claim 35. Accordingly the rejection has been rendered moot.

The Examiner also rejected claims 6-12, 15-17 and 35-37 as allegedly not complying with 35 U.S.C. §112, second paragraph, definiteness requirement.

Applicant respectfully submits that the rejection be withdrawn for the following reasons.

Applicant has amended claim 6, steps (b) and (c) as suggested by the Examiner and as described, *supra*. Applicant respectfully submits that these amendments overcome the alleged indefiniteness of these claims. Claims, 15, 16 and 35 have been cancelled and thus the rejection with respect to these claims has been rendered moot.

Accordingly, Applicant respectfully submits that the claims now fully comply with 35 U.S.C. §112, second paragraph, definiteness requirement.

In view of the above, the Applicant respectfully submits that all the claims are in condition for allowance. Early and favorable consideration is respectfully solicited.

In the event that any additional fees are required, the PTO is authorized to charge Nixon Peabody LLP Deposit Account No. 50-0850.

Respectfully submitted,

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Customer No. 40679

/Leena H. Karttunen/
Ronald I. Eisenstein (Reg. No.: 30,628)
Leena H. Karttunen (Reg. No.:60,335)
NIXON PEABODY LLP
100 Summer Street
Boston, MA 02110
(617) 345-6054/1367